

EQ:

PART I

Recall: Answer these questions.

$\sin 30^\circ = y$

$\cos 90^\circ = y$

$\tan 60^\circ = y$

$\sin \theta = \frac{\sqrt{3}}{2}$

$\cos \theta = \frac{\sqrt{2}}{2}$

$\tan \theta = 1$

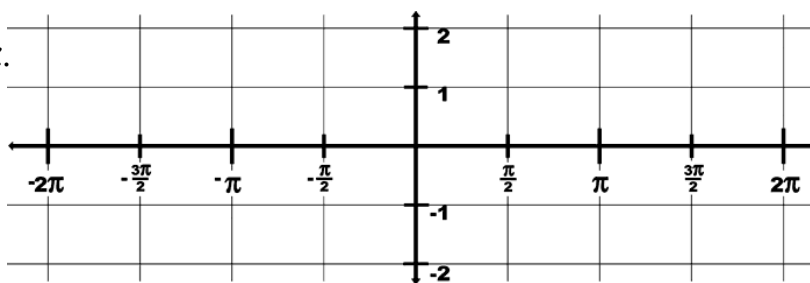
RECALL:

When given the _____ for a trig function and you're looking for an _____, you must use an _____ trig function.

Inverse Notation for Trig Functions: _____

Recall: Graph the parent function $y = \sin x$.

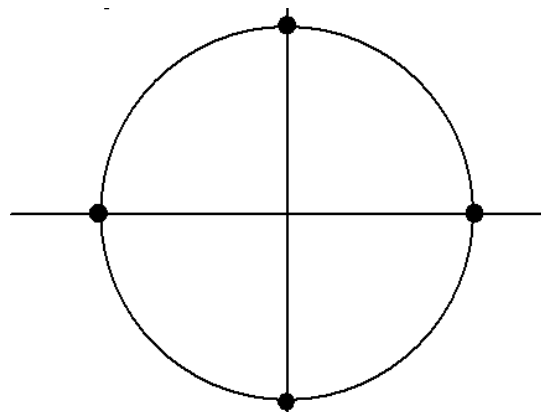
How does the graph of sine tell you it's a function?



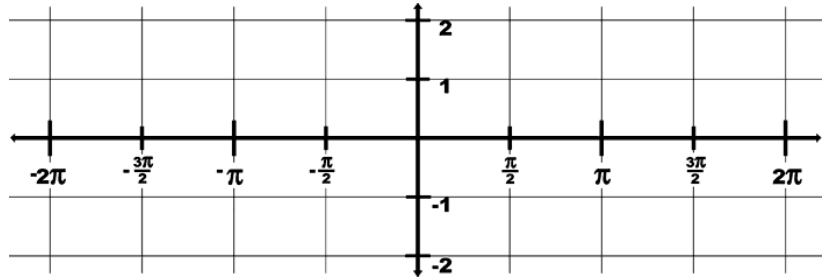
Will the inverse of sine be a function?

We restrict the domain of sine from _____ to _____.

Therefore \sin^{-1} only exists in Quadrants _____ & _____.

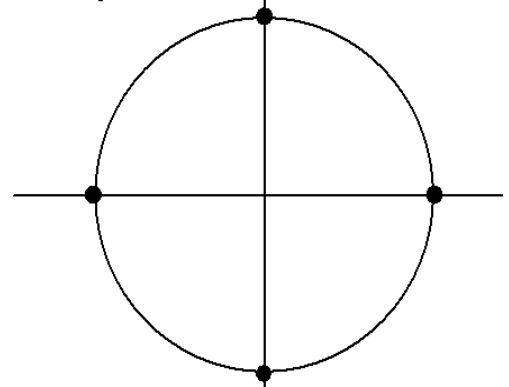


Graph the parent function $y = \cos x$.

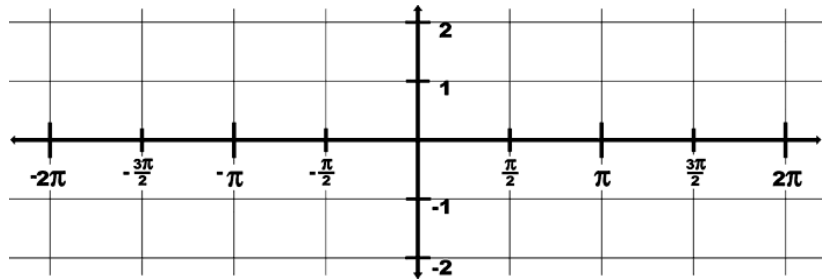


We restrict the domain of cosine from _____ to _____.

Therefore \cos^{-1} only exists in Quadrants _____ & _____.

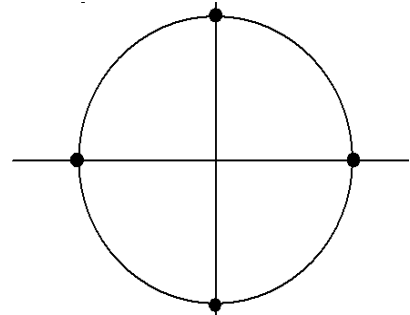


Graph the parent function $y = \tan x$.



We restrict the domain of tangent from _____ to _____.

Therefore \tan^{-1} only exists in Quadrants _____ & _____.

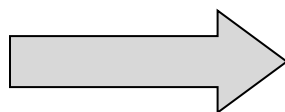


Location of Inverse Trig Functions:

Quad I & IV

Quad I & II

Quad III



Ex. Find the value for each of the following.

1. $\cos^{-1}(-\frac{1}{2}) = x$

2. $\sin^{-1}(-1) = x$

3. $\tan^{-1}(-\sqrt{3}) = x$

What about values not found on the unit circle?

Ex. Find the approximate value of $\sin^{-1}(\frac{1}{3}) = x$.

Ex. Find the approximate value of $\tan^{-1}(-\frac{1}{4}) = x$.

Ex. Find the approximate value of $\sec^{-1}(6) = x$.

Ex. Find the approximate value of $\cot^{-1}(-\frac{3}{4}) = x$.

*** Must give final answer in ____ quadrant.

➤ Assignment PW #1: Inverse Trig Functions

PART II

❖ What makes these expressions different from the ones in Part I?

1. $\cos^{-1}\left(\cos\frac{-\pi}{3}\right)$

2. $\sin^{-1}\left(\sin\frac{11\pi}{6}\right)$

3. $\sec^{-1}\left(\sec\frac{-\pi}{4}\right)$

4. $\cot^{-1}\left(\cot\frac{-3\pi}{2}\right)$

5. $\cos^{-1}\left(\cos\frac{5\pi}{4}\right)$

❖ What makes these expressions different from #1 - 4?

6. $\sin\left(\tan^{-1}\frac{3}{2}\right)$

7. $\tan\left(\cos^{-1}\left(\frac{-5}{13}\right)\right)$

8. $\tan\left(\cos^{-1}\frac{3}{4}\right)$

❖ Use your graphing calculator to evaluate.

9. $\cos\left(\tan^{-1}0.5\right)$

10. $\sec\left(\tan^{-1}0.8\right)$

➤ Assignment:

PW #2: Inverse Trig Functions

PW #3: Inverse Trig Function